

CLAIMS

What is claimed is:

- 1 1. An ^{17}F labeled organic compound, comprising an ^{17}F labeled
2 alkane having 2 or more carbon atoms.
- 1 2. The ^{17}F labeled organic compound according to claim 1,
2 wherein the alkane comprises at least two fluorine atoms and at least one of the
3 fluorine atoms is an ^{17}F .
- 1 3. The ^{17}F labeled organic compound according to claim 2,
2 wherein the ^{17}F labeled alkane comprises 1,1,1,2-tetrafluoroethane wherein at least
3 one of the F atoms is an ^{17}F .
- 1 4. ^{17}F labeled fluoromethane produced by contacting ^{17}F labeled
2 F_2 with methane in the presence of a metal oxide catalyst to produce the ^{17}F labeled
3 fluoromethane.
- 1 5. An ^{17}F labeled fluoroalkane produced by contacting ^{17}F labeled
2 F_2 with an unsubstituted alkene, a haloalkene, an unsubstituted alkyne, or a
3 haloalkyne in the presence of a metal oxide catalyst to produce the ^{17}F labeled
4 fluoroalkane.